PTOLEMUS
Consulting Group

AUGMENTED MOBILITY 2030
Global Study

2019 EDITION

The first quantified analysis of 18 transport modes worldwide

From transport to user-centric multimodal mobility

The first strategy consulting & research firm entirely focused on augmented mobility & automation

Strategy consulting services

Strategy definition	Investment assistance	Procurement strategy
Innovation management	Business development	Project management

Market research services

Off-the-shelf reports	Subscription services	Custom market research

Fields of expertise

Mobility services	Car pooling Car sharing MAAS	Micro-mobility Ride hailing Roadside assistance	Shared mobility Smart parking Tax refund
Vehicle services & telematics	bCall eCall FMS SVT / SVR	Tracking VRM In-car Wi-Fi Fuel cards	Parking Navigation Speed cameras Traffic information
Usage-based charging	Car As A Service Electronic Toll Collection	In-vehicle payments Road charging	UBI / PAYD Vehicle rental Vehicle leasing
Vehicle data & analytics	AI CAN-bus Crowd-sourcing Data protection	Driving behaviour OBD Predictive analytics	Remote diagnostics xFCD
Vehicle automation	ADAS	Autonomous cars	Autonomous trucks
Enabling technologies	Positioning (GNSS / WiFi / cellular)	M2M / connectivity New energies	Smartphones Telematic devices V2X

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Our clients come from across the mobility ecosystem

Analytics, maps & applications providers

Automotive manufacturers & suppliers

Mobile telecom operators

Telematics solution providers

Fleet & fuel, ITS & regulators

Device & location suppliers

Insurers, aggregators & assistance providers

Banks & private equity investors

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A team of 30 consultants, experts & researchers with 17 nationalities serve our clients worldwide

■ Clients

Ⓞ Offices / Consultants

120 consulting assignments to help our clients innovate in the mobility domain

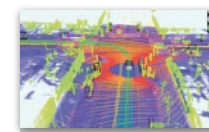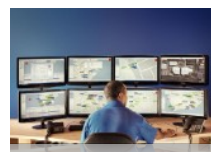|		
Assessed the global trends and built forecasts of 14 connected mobility services	Leading Telematics Service Provider	
Defined its future vehicle connected services global strategy	Global roadside assistance group	
Conducted a survey of 15 OEMs worldwide on their connected mobility solution needs	Tier-1 automotive supplier	
Defined connected vehicle data strategy for innovative telematics services provision & monetisation	Vehicle data aggregator	
Built 5-year strategy & go-to-market plan in EU mobility services market	Global electronic tolling supplier	
Detected opportunities from connected & autonomous vehicles for the space industry	cnes	

Identified market opportunities & defined strategic plan in connected mobility services	Road & infrastructure operator	
Evaluated the market potential of HD maps for autonomous vehicles	Consortium of OEMs & map makers	
Conducted the due diligence of VTraffic, a leading traffic information provider	Leonardo & Co.	
Advised on the optimal structuring of its upcoming tolling scheme	Ministerie van Infrastructuur en Waterstaat	
Defined our client's strategic positioning in the field of connected vehicle services	egis	
Defined its global data & analytics strategy to predict incidents	Major road operator	

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PTOLEMUS can help your organisation define and achieve its mobility strategy

- **Strategy definition**
  - Future vision in mobility
  - Board coaching
  - Market entry
  - Data analytics strategy
  - Data monetisation strategy
  - Multimodal mobility design and planning
  - Strategy shaping workshops

- **Investment assistance**
  - M&A strategy
  - Commercial due diligence
  - Technology due diligence
  - Feasibility studies
  - Market sizing
  - Business case development
  - Cost benefit analyses
  - Post-merger integration

- **Innovation strategy**
  - Mobility value proposition
  - Mobility plan design
  - Product definition
  - Go-to-market strategy

- **Innovation delivery**
  - Proof of Concept design & launch
  - Architecture definition
  - Project management

- **Procurement**
  - Sourcing strategy
  - Specifications
  - Supplier selection
  - Assistance to tenders

- **Business development**
  - Partnership strategy definition
  - Assistance to tender response

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This study is the first research to analyse the global shift from transportation to mobility

The first quantified analysis of 18 transport modes worldwide

A rigorous, in-depth analysis...

- **Over 500+ pages**, the report measures the combined impact of mega-trends on the mobility ecosystem
  - Assesses the **underlying driving factors** defining the importance of each trend on mobility
  - Analyses the key trends' impact on **market volumes**
  - The result is a **demand forecast** for 18 different land transport modes and the evolution of their market shares

- **Based on 10 years of experience in strategy consulting in mobility**, it leverages:
  - **Over 40 interviews** with OEMs, cities, mobility service providers, infrastructure providers and big data service providers
  - Desk and primary research by a team of 8 consultants and analysts
  - **Insights from 120 consulting assignments** on mobility markets, technology and strategy

- For each market, the report provides:
  - **Driving factors**
  - Triggers and inhibitors
  - Value chain
  - Case studies from **best practice** demonstrators

... that combines many firsts:

- The **combined impact of 12 mega-trends on**
  - 16 stakeholder categories
  - 18 transport modes
  - 18 regions

- **A true user-centric, multimodal research**, combining a qualitative and quantitative methodology

- **18 real world case studies** demonstrating best practices in each mobility markets

- A deep-dive assessment of the evolution of core **mobility markets** and their effect on the demand

- **Strategic guidelines** on withstanding the upcoming trends

- **2018-2030 global mobility demand forecasts**
  - Excel forecast outputs
  - 11 transport modes forecast
  - Global volume forecasts in passenger/km
  - 18 countries / regions
  - AVs and EVs volume projections

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It was written by a team of European, American and Asian mobility experts

Frederic Bruneteau
Managing Director Brussels

Frederic Bruneteau is the **founder** of PTOLEMUS Consulting Group.

He has accumulated **20 years of experience of the mobility / transport domains** and 15 years of strategic and financial advisory.

He has become **one of the world's foremost experts of connected mobility & automation** and is interviewed on the subject by publications such as the *Financial Times*, the *Wall Street Journal* and *The Economist*.

Frederic has spoken at more than 50 related conferences worldwide.

He has helped numerous organisations define their strategic & innovation plans and implement them including Abertis, Admiral, AGC, Aioi Nissay Dowa, Allianz, Axa, Baloise, BP, Bridgestone, Brisa, Coyote System, Danlaw, Egis, ENI, ESRI, Europ Assistance, the European Commission, Generali, HERE, Kapsch, Liberty Mutual, Macif, Matmut, Nationwide, Michelin, the Netherlands' Ministry of Transport, Octo Telematics, Pioneer, Qualcomm, Scania, Sentiance, Société Générale, Telit, Thales Alenia Space, TomTom, Toyota, Vodafone and WEX.

Frederic directed the research for this report.

Alberto Lodieu
Manager, Paris

Alberto has **9 years of experience in strategy and operations consulting** with organisations such as Abertis, AGC Automotive, AXA Partners, CNES, the French space agency, CVC Capital Partners, DMP, Europ Assistance, the European Commission, Liberty Mutual, Silver Lake, Société Générale, Telespazio and ZirconTech.

He participated in **over 30 projects** to help organisations identify and implement the set of initiatives needed to achieve or preserve their leadership.

Alberto has managed this mobility research project and has led our work to build a global picture and forecast of mobility trends: new players, new vehicle types, new business models, smart city initiatives, etc.

Dr. Sahand Malek
Senior Consultant, Brussels

Sahand Malek has gained **5 years of experience in strategy & R&D projects** on **mobility data and analytics**, on-board diagnostics (OBD), Usage-Based Insurance (UBI) and Advanced Driving Assistance Systems (ADAS).

He has helped clients such as **Abertis**, **Baloise Insurance**, **Bridgestone, CVC Capital Partners**, **Pioneer, Sentiance** and **ZirconTech**.

Sahand reviewed our global quantitative mobility forecasts.

Apoorv Swarup
Business Analyst, Paris

Apoorv has 5 years of strategic and operational experience across India and Europe in mobility.

He has **helped organisations such as AvisBudgetGroup**, **Bharat Petroleum**, **Michelin, Renault Nissan and the World Bank.**

For Renault, he mapped the competitive landscape including product and pricing strategies for EV and connected services.

For this report, Apoorv **led the research on electric vehicles, Big data and AI**.

In addition, he built **our global for BEV and PHEV forecasts until 2030**.

Annie Reddaway
Research Analyst, London

Annie Reddaway has over 4 years of experience in the connected vehicle industry, specifically in the areas of **connected car, cybersecurity and mobility services**.

She has researched and run various events and webinars on these topics.

In 2018, Annie was awarded "Best New Mobility Leader, Analyst or Spokesperson" in the Tech Cars Awards from Auto Connected Car News.

For this report, **Annie analysed the impact of mobility trends on 16 stakeholder categories**.

We respond to numerous strategic questions

How will the change in mobility behaviour in cities affect the overall car market?

How will present and future trends affect your company's strategy?

How will the combined impacts of key changes impact mobility stakeholders?

Will Uber kill taxis or will electric scooters kill Uber?

How will each of the 18 transport modes evolve in my market?

What will be the share of private cars in 2030 mobility?

What will be the nature and volume of AVs in 2030?

Who in the new value chain will 'own' the end-customer?

Will OEMs retain control over the mobility services platform?

Will AVs replace or increase the total number of urban trips?

What will be the role of cities and governments in the new mobility value chain?

Who will bill for mobility, insurance or tolling in 2030?

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The first quantified analysis of 18 transport modes worldwide

From transport to user-centric multimodal mobility

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Up to now, future mobility has been predicted in a far too simplistic way

- Unconsciously, we all expect the future of mobility "to be like the past, just bigger"

- We assume that we understand the mega-trends (automation, MaaS, etc.)

- We analyse and forecast the mega-trends separately

- Our models are generally vehicle-centric

Mobility has been predicted as a series of straight, non connected lines

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To really understand the future of mobility, our analysis must capture and combine all key trends

- **Mega-trends are not linear**
  - New things arise
  - Others die

- **Trends are like waves**
  - The beginning of the trend is benign
  - The second part is the tsunami

- **Trends impact each other and must be assessed in combination**

- **We must adopt a user-centric view**

The future of mobility is blurred, messy and cluttered with high noise levels.

And we do not see the sky (or the sun) to orientate ourselves.

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Mobility will disrupt all of us before we expect it

"In the long term, we're all dead"

John Maynard Keynes

"In the mid term, we're all dead"*

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Note: * If we don't change ourselves

Mobility is changing gear, just press "RESET" and move fast!

Harald Krueger
CEO, BMW

"The electric vehicles not only have beneficial effects on the air quality, but the car sharing principle itself also helps cities manage traffic and parking problems. A recent study showed that each shared electric vehicle replaces up to 15 private cars."

Olivier Reppert
CEO, car2go

"Future mobility will connect every area of people's lives. And that's where we see new opportunities for premium mobility."

Dara Khosrowshahi
CEO, Uber

"We are now thinking of Uber as a mobility platform. We want you to come to Uber, we'll get your car, we will encourage you to share it, hopefully we will get you an electronic vehicle or a bike."

"Mobility as a Service is set to make the biggest change in transport since affordable cars came to market"

Sampo Hietanen
CEO, MAAS Global

Mary Barra
CEO, General Motors

Noam Bardin
CEO, Waze

"Our mission is much larger than just a navigation app. As a mobility provider, we want to end traffic."

"Creating a zero congestion world starts with sharing. With an average of 95% of cars sitting idle each day, maximise the utilisation of your car. This is the future of mobility."
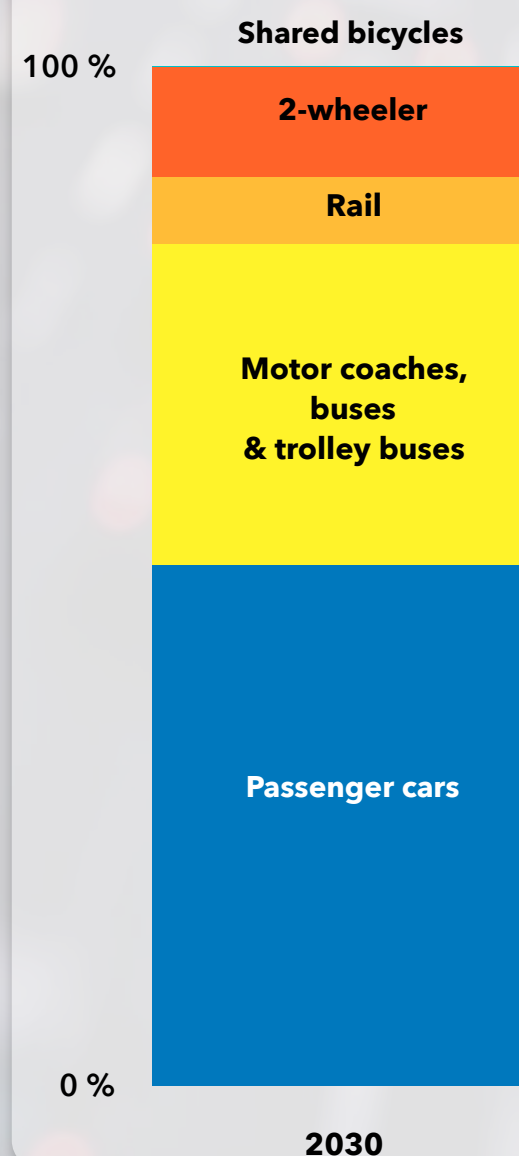
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The global demand for mobility will grow by 55% by 2030, mostly absorbed by cars!

- Global mobility will represent **70** trillion passenger km in 2030, a 55% increase
  - The growth will be facilitated by **rapid vehicle sophistication brought by developments in automation, electrification and connectivity**
  - As a result, **the number of passenger kilometres driven by cars will further increase by 35% from 2020 to 2030**

- The new **mobility models** enabled by smartphonisation and machine learning will continue to **transform urban mobility**
  - **Car pooling will grow by 22% per annum**
  - **Ride hailing alone will generate 50% of the revenues of car-centric mobility in 2030**
  - **Shared mobility will add 60 billion passenger km** into global traffic, **mainly from cars**

- Urban mobility demand will be **heavily influenced by the deployment of level 4 (L4) autonomous vehicles (AVs), starting in 2021**
  - **15 million L4 AVs** are expected on the road by 2030

- **Automation will lead the ownership model to rapidly switch from owned to shared**
  - Today using a taxi is typically 5 times more expensive than using one's private car
  - By 2030, on average, it will be **20% cheaper to use an autonomous taxi than to use a privately-owned AV**

- Despite fleet electrification growing at 35% annually, only **90 million electric vehicles (EVs) will be on the road by 2030**

- **Old fashion transport modes will take off faster than alternative and new vehicles. They will not solve the congestion problem by 2030**
  - Motor **buses and coaches** will become one of the fastest growing transport modes with **22 trillion passenger km** in 2030
  - **Shared electric mopeds** will see the fastest growth of all mobility modes and are expected to represent **8 million passenger km** by 2030

Modal split of passenger transport

Shared bicycles

100 %

2-wheeler

Rail

Motor coaches, buses & trolley buses

Passenger cars

0 %

2030

Mega-trend #2: Smartphones will become the sole (2-way) interaction mechanism with mobility users

"People tapped, swiped and clicked on their smartphone a whopping 2,617 times each day, on average"

Michael Winnick, CEO, dscout*

- Smartphones have become one the **most powerful computing devices and integrators** for applications

- The rapid technological advancement of smartphones will give **complex functionalities to even low-end smartphones**

- **Smartphones bring intelligence to the edge:**

  - The system becomes smart as it leaves the old, top-down, command-and-control model

  - It can adjust dynamically without the centre controlling it

- **Fundamentally, thanks to services such as Waze or TomTom, any user can becomes as smart as the old traffic management centre!**

- Emerging markets, notably China, will move their transport interactions to mobile even faster than Europe and North America

- **Suppliers of traditional systems will gradually disappear,** including ticketing and access systems, supplier of tolling devices, etc.

Mega-trend #3: The battle for vehicle data will rapidly expand into a war for mobility intelligence

"In an autonomous and multimodal mobility future, the focus of the data battleground will move from the vehicle to the user."

Toon Vanparys, CEO, Sentiance*

- **Mobility data generation is exploding** thanks to smartphones, increased connected vehicles, mandates such as eCall and open transport datasets and AVs

- **Most OEMs have deployed / are deploying their own cloud platforms**, often based on technology giants' infrastructure

- **As a result, Google, Amazon and Microsoft are now firmly positioned in the vehicle data value chain**

- However, the **real battlefields of the future** will be different:
  - How to smoothly exchange and monetise vehicle data
  - How to go beyond vehicle data and towards a complete understanding of people's mobility
  - How to integrate each transport mode data into transactional MaaS platforms
  - How to create smart systems, using AI

- **Regulators will play a key role in forcing open access to data if the market does not make it happen**

Source: PTOLEMUS - Note: * Sentiance is a Belgian analytics platform provider

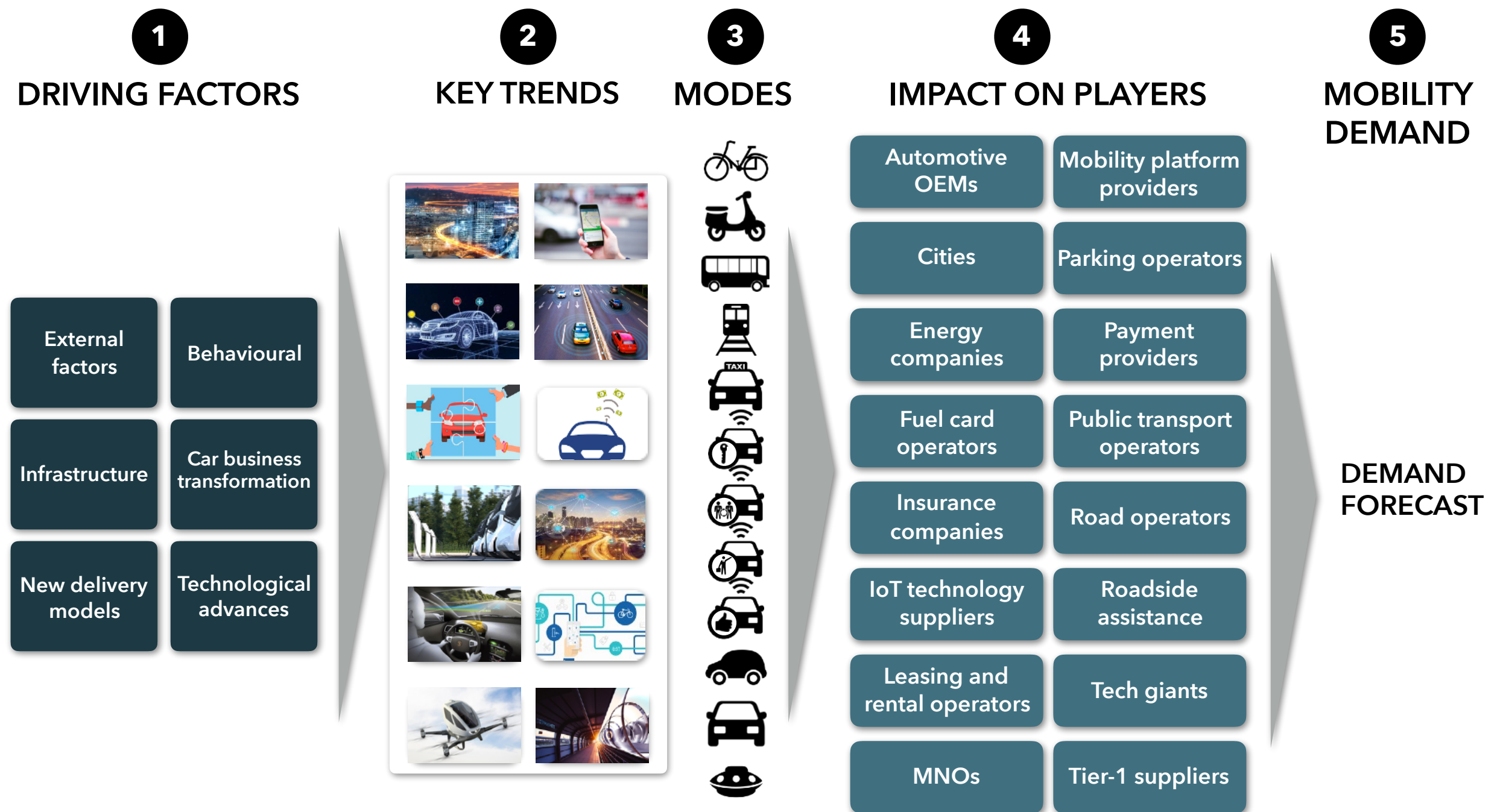# Mega-trend #4: Usage-based insurance and road usage tolling will make the cost of mobility variable

""The acquisition of PayTollo is exciting… as we continue to expand our consumer convenience and safety offerings"

Joe Verbrugge, EVP & GM, Emerging Business, SiriusXM

- **The UBI market has grown 2.5 fold in the last 3 years**
  - UBI is **growing out of traditional markets** to new segments and new markets such as APAC
  - It is driven by **device cost decreases and smartphone-enabled programmes**

- We expect **global UBI premiums to reach €180 billion by 2030**

- **Electronic road tolling subscriptions** have reached 310 million in 2018 and will continue to expand rapidly, driven by:
  - Increasing gaps in infrastructure funding
  - Worsening traffic congestion
  - Growing external costs
  - Smartphone- and in-vehicle tolling

- **Both will expand in parallel, making the cost of mobility variable:**
  - Increasingly GNSS will enable a distance-based road and insurance-charging system…
  - Which we expect to become commonplace with shared autonomous vehicles

Augmented Mobility 2030 is the first *holistic* analysis of future mobility

1

DRIVING FACTORS

2

KEY TRENDS

3

MODES

4

IMPACT ON PLAYERS

5

MOBILITY DEMAND

External factors	Behavioural
Infrastructure	Car business transformation
New delivery models	Technological advances

Automotive OEMs	Mobility platform providers
Cities	Parking operators
Energy companies	Payment providers
Fuel card operators	Public transport operators
Insurance companies	Road operators
IoT technology suppliers	Roadside assistance
Leasing and rental operators	Tech giants
MNOs	Tier-1 suppliers

DEMAND FORECAST

We considered a wide array of factors that have an impact on the future of mobility

1 **DRIVING FACTORS**

Behavioural

- Smartphone development and massive adoption
- High mobile engagement
- Rapid adoption of shared service models
- Increasing vehicles underutilisation

Car business transformation

- Car data monetisation
- Proliferation of connected & traceable transportation
- Rise of OEM data hubs
- Fleet electrification

Infrastructure

- Increasing penetration of smart urban infrastructure
- Adoption of wireless sensors in road infrastructure
- Rise of edge computing and 5G technologies
- Network technologies rapid development
- Increase in data transfer speed via new wireless networks

External factors

- Environment regulations and incentives
- Increasing traffic and congestion in growing cities
- Global population growth
- Waves of increase in car safety requirements

Technological advances

- Data processing and storage's increasing capacity
- Low-cost and efficient sensors
- Improvement in GNSS positioning
- AI and machine learning used for analytics and prediction
- Lower battery and EV production costs
- Open APIs

New delivery model

- New fair pricing models
- Smartphone as a channel to mobility services
- Shared & open data
- New cashless payment options
- Rise of cashless payment and mobile banking platforms

We identified the 12 mega-trends shaping future mobility

② **MEGA-TRENDS**

Connectivity	**Smartphonisation**	**Data & AI**	**Usage-based charging**
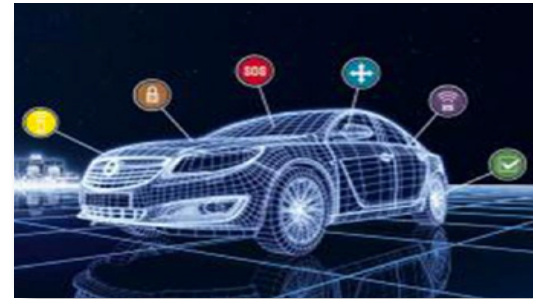
On-demand & shared services	**Electronic payment**	**Smarter infrastructure**	**Mobility as a Service**

Automation	**Electrification**	**New land vehicles**	**New air vehicles**

We analysed 18 transport modes, from metro to e-bicycles

3 **TRANSPORT MODES**

Car sharing

Ride hailing

Car pooling

Taxi

Car rental

Own vehicle for personal use

Autonomous car sharing /ride hailing

Own AV for personal use

Bus/motor coach

AV buses & shuttles

Tram & metro

Train

Shared 2-wheeler

Shared bicycle

New land vehicles

New air vehicles

Walking

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We investigated how multimodal mobility is delivered in practice

3 TRANSPORT MODES
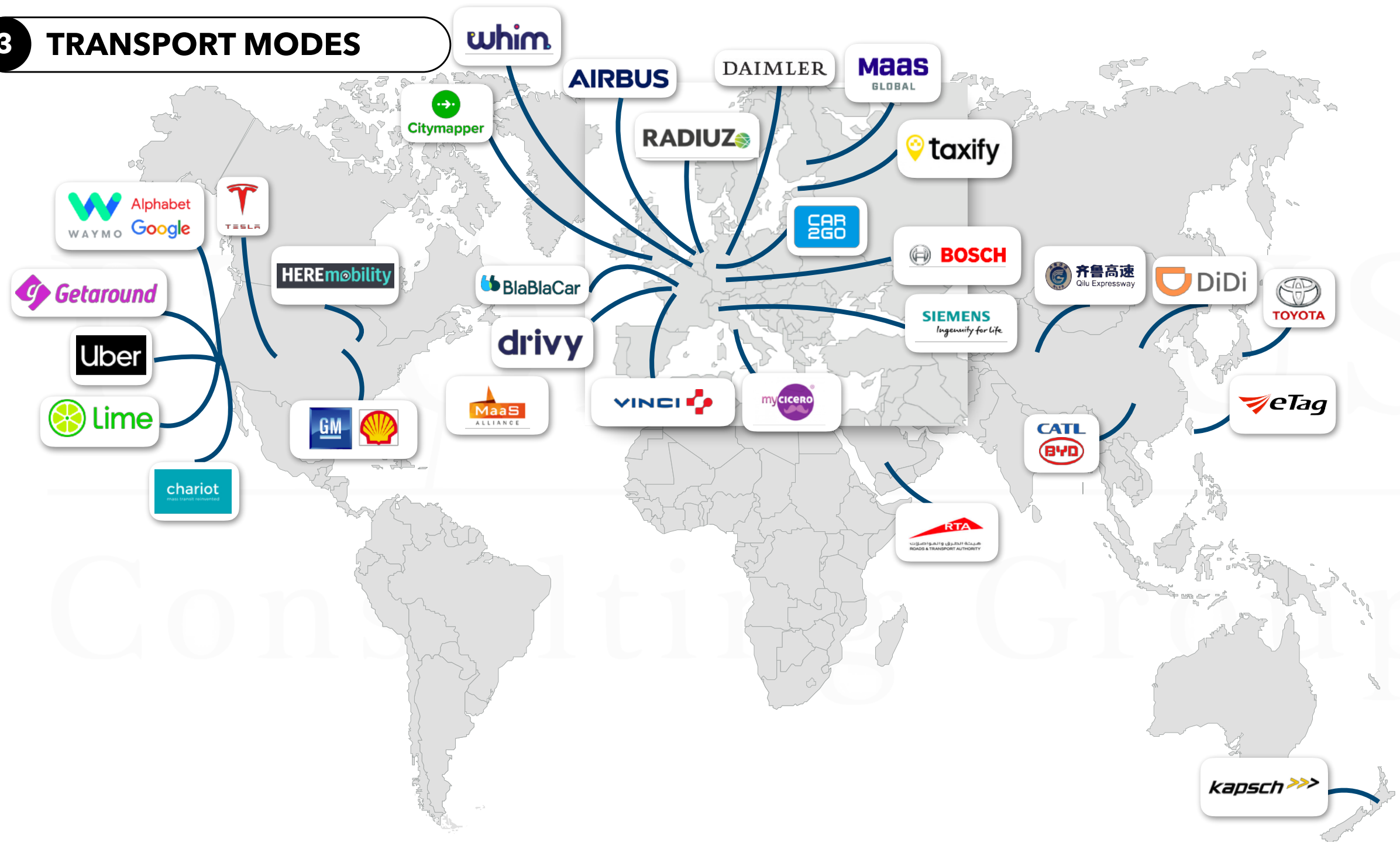
We then analysed how each trend will impact 16 categories of mobility stakeholders

4 **IMPACT ON KEY PLAYERS**

AUTOMOTIVE OEMs · CITIES · ENERGY COMPANIES · FUEL CARD OPERATORS · INSURANCE COMPANIES · IoT TECH. SUPPLIERS · LEASING / RENTAL OPERATORS · MOBILE OPERATORS · MOBILITY PLATFORM PROVIDERS · PARKING OPERATORS · PAYMENT PROVIDERS · PUBLIC TRANSPORT OPERATORS · ROAD OPERATORS · ASSISTANCE COMPANIES · TECH GIANTS · TIER-1 AUTO. SUPPLIERS

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For example, we measured both positive and negative impacts of mobility on cities

④ IMPACT ON KEY PLAYERS

Mobility trends' impact on cities (2019 - 2030)

Impact by year (2019 - 2030)

Positive

Neutral

Negative

2019   2021   2023   2025   2027   2029

- Connectivity
- Smartphonisation
- Artificial intelligence
- Usage based charging
- On-demand and shared services
- Electronic payments
- Smart infrastructure
- Automation
- MAAS
- Electrification
- New road vehicles
- New air vehicles

Net impact (2020, 2025 and 2030)

Positive

Neutral

Negative

2020   2025   2030

- **The impact of mobility trends is already visible** in most major cities
  - **Smartphones** have enabled **shared and on-demand urban transportation to flourish,** plus transport data aggregators and routing apps
  - **Smartphone payments are likely to fully replace cash**

- We expect that mobility trends will bring even more benefits to citizens in the next decade
  - ADAS will dramatically reduce the frequency of accidents with pedestrians and bicycles
  - Cleaner energies will contribute to improved air quality and noise reduction
  - Smart infrastructure will enable monitoring of e.g. traffic and improve safety through V2V and V2I
  - MaaS schemes will improve commuting times and lower the cost of traveling
  - Shared mobility has the potential to dramatically

To order the study or enquire about our new subscription model, contact contact@ptolemus.com

  - Central platforms will collect and analyse massive amounts of data in real time, enabling incident prediction and better resource management
  - L4 AVs are expected to make vehicles an integral and safer part of the city's collective transportation by the end of the next decade

- The impact of these trends will continue to grow in the long term

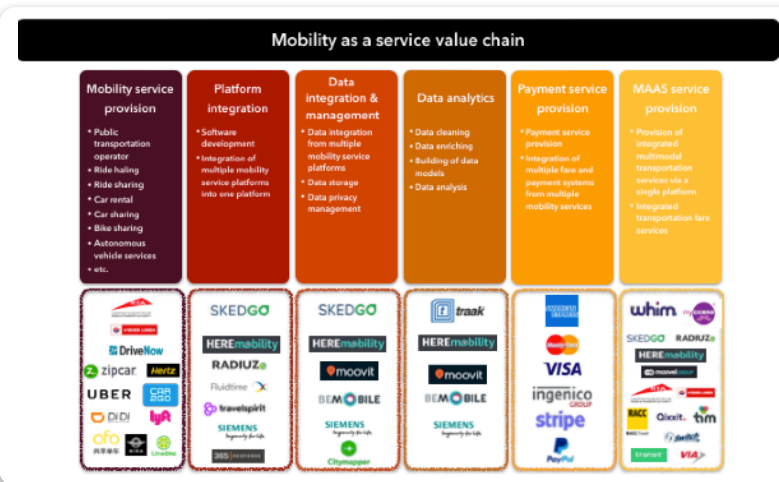- However, it is difficult for cities to make long term plans around new or untested technologies

We then forecast the demand for each mobility market

5 **MOBILITY DEMAND**

We identify the driving factors
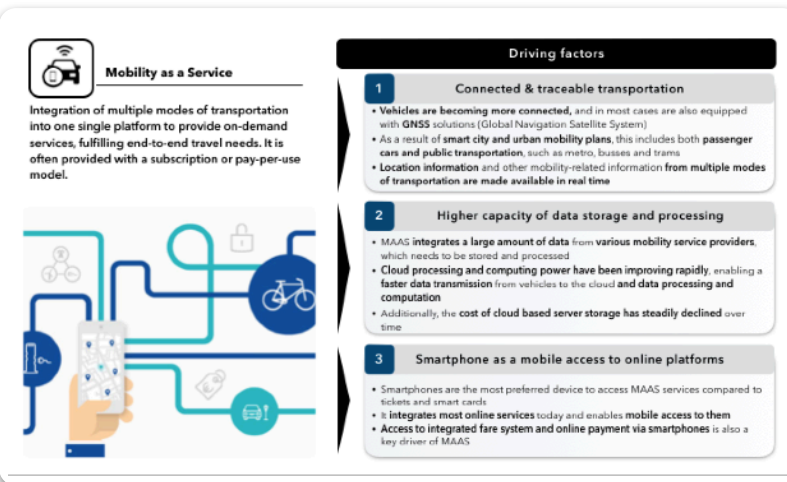
... we analyse the value chain

... we appraise the impact of each trend on each transport mode

... we pinpoint the main triggers and inhibitors

... we identify the level of impact vs. other factors / trends
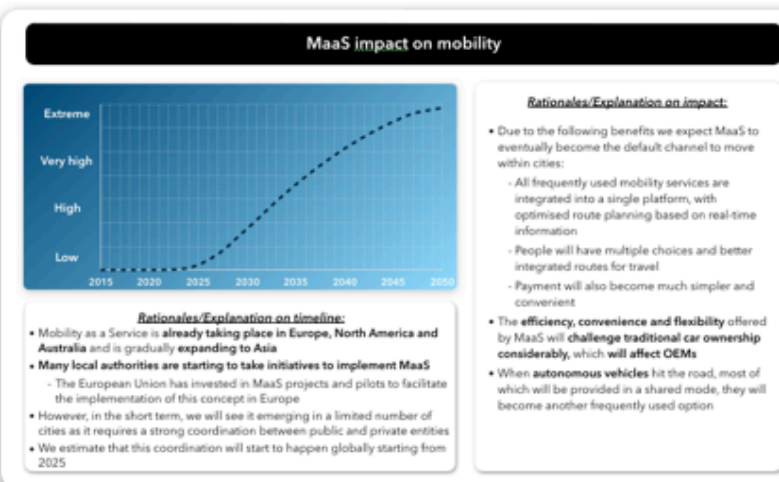
...finally, we present validated forecasts
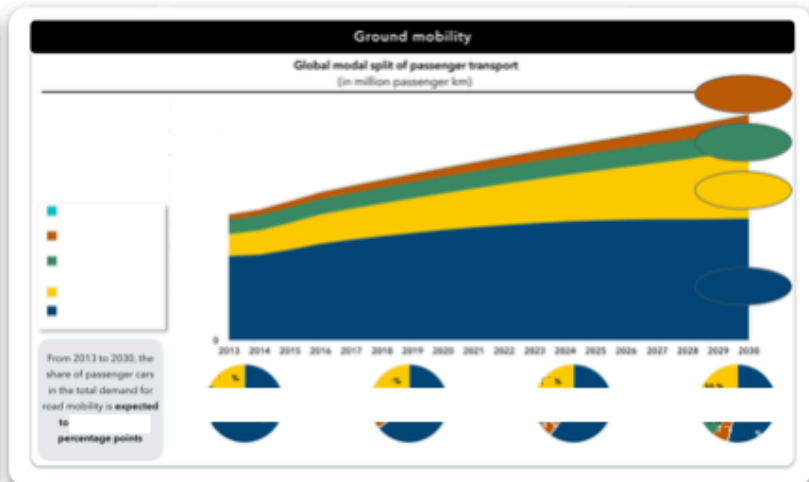
The study bring the first ever bottom-up forecast of 11 land transport modes in 18 regions until 2030

5 **MOBILITY DEMAND**

Each transport mode is forecast over 3 time horizons: from 2018 until 2020, 2025 and 2030

Geographic scope

- Timescale: 2018 - 2030
- Unit of volume: million passenger km

Transport modes projected:
- Passenger cars
  - Own vehicles for personal use
  - Car sharing
  - Ride hailing
  - Car pooling
  - Car rental
  - Taxi
- Coaches, buses & trams (incl. sub-categories)
- Rail
- Two-wheelers (incl. sub-categories)
- Bicycles
- New vehicles

Also included:

- Global new electric passenger car registrations
- Electric passenger cars in use (5 key markets)
- Autonomous passenger car registrations (L2, L3, L4)
- Autonomous cars in use (L2, L3, L4)

Mode	Graph	Units	CAGR 2013 - 2017	CAGR 2017 - 2030
Passenger cars		Millions of passenger km	x %	x %
Own vehicles for personal use		Millions of passenger km	x %	x %
Car sharing		Millions of passenger km		
Ride hailing		Millions of passenger km		
Car pooling		Millions of passenger km		
Car rental		Millions of passenger km		
Taxi		Millions of passenger km		
Motor coaches, buses & trolley buses		Millions of passenger km		
Rail		Millions of passenger km		
2-wheeler / shared e-scooter		Millions of passenger km		
Shared bicycles		Millions of passenger km		
New vehicles				

Mode	Graph	Units	CAGR 2013 - 2017	CAGR 2017 - 2030
Motor coaches, buses & trolley buses		Millions of passengers km		

Mobility demand for motor coaches, buses & trolley buses
(in million of passenger km)
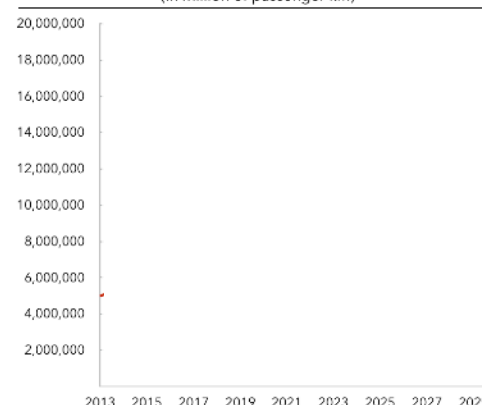
Validation

European Union
- France
- Germany
- Italy
- Spain
- UK
- Rest of EU

Rest of Europe

Russia

North America
- USA
- Canada

Latin America

Asia Pacific
- China
- India
- Japan
- Australia
- Rest of APAC

South Africa

Rest of Africa

Global

PTOLEMUS

The first comprehensive analysis of the global mobility market is now available as a single, worldwide company licence

The first quantified analysis of 18 transport modes worldwide

	Augmented Mobility 2030 Global Study		Forecast	Mobility strategy workshop
	Buy direct (Invoice)	**Buy online** (Visa or MasterCard)		
Contents	• **500-page analysis of the mobility market** through the key factors and trends impacting mobility • An assessment of the future strategies of each stakeholder type • Global mobility demand projections to 2030 • All-in-one searchable and interactive document (PDF format, password-protected)		• Forecast of mobility passenger km by country and transport mode through 2030 • Autonomous Vehicle volume forecasts through 2030 • Electric Vehicle volume forecast through 2030	• The full study presented to your board or strategy team • Half-day workshop in your offices*
Company-wide licence	**€ 3,995** *Approx. $4,530*	**€ 4,200** *Approx. $4,760*	**€ 2,000** *Approx. $2,670*	**€ 2,000** *Approx. $2,670*
	Click here to request an invoice	**Click here to purchase online**		

As transportation is morphing into mobility, strategists must adopt a user-centric, multimodal approach

"Everybody has a plan until they get punched in the face"

Mike Tyson

Thank you!

- **Global transportation will continue to grow**, making urban congestion & pollution even more acute

- The whole **mobility industry has been put to task** but mono-mode transport categories and models are outdated

- **Augmented Mobility 2030 Global Study offers the first holistic analysis to redefine mobility strategies**
  - From mono- to multi-modal
  - From supply-driven to user-centric

- **It is the tool to make it happen:**
  - A deep analysis of what is about to come
  - 18 modes forecast until 2030

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Disclosure

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The report covers the activities of over 300 companies

Company	Type	Company	Type	Company	Type	Company	Type
365 Response	Platform integration	Amadeus Capital	Banks & Private Equity Investor	Audi	OEM	Bosch	Tier-1 Suppliers
99 Taxis	Mobility Platform Providers	Amazon	Tech Giant	AutoCorp	Leasing & Rental Operator	BP	Energy Company
A-to-Be	Mobility Platform Providers	American Express	Payment service provision	Automotive Energy Supply Corporation	Battery Production	Bridgestone	OEM/Supplier
A1	MNO	Amundi	Banks & Private Equity Investor	AutoNation	Vehicle Distributor	Brisa	Road Operators
A123 Systems	Battery Production	Andrew	Device and Location Supplier	Autostrade	Road Operators	Brussels Metro	Public Transport Operators
AA	Roadside Assistance	APCOA Parking	Road infrastructure provision and operation	AVAG Holding	Vehicle Distributor	By My Car	Vehicle Distributor
AAA	Roadside Assistance	Apple	Software Development	Avis	Leasing & Rental Operator	BYD	Battery Production
Abertis	Road infrastructure provision and operation	Aral	Fleet & Fuel, ITS & Regulators	Avla Networks	Iot system integration	Cabify	Mobility Platform Providers
ACTA	Roadside Assistance	ARC Europe	Roadside Assistance	Baidu	Tech Giant	Car2Go	Mobility Platform Providers
ADAC	Roadside Assistance	ARI	Leasing & Rental Operator	Bank of America Merrill Lynch	Banks & Private Equity Investor	CATL	Battery Production
AEG	Energy Company	Arkan	Telematics Solution Providers	Barclays	Banks & Private Equity Investor	CCC Information Services	Analytics Maps and Application Provider
Agero	Insurers, aggregators and assistance providers	Arm	Iot Hardwate provision	Base	MNO	CCV	Tech firms
Aioi Nissay Dowa Insurance	Insurers, aggregators and assistance providers	Arrend Leasing	Leasing & Rental Operator	Beclib	Charging station providers	CGI	Fleet & Fuel, ITS & Regulators
Airbiquity	Telematics Solution Providers	Arval	Leasing & Rental Operator	BEM BILE	Data analytics	Chargemaster	Charging station providers
Airbus	Tier-1 Suppliers	AT&T	MNO	Bemobile	Mobility Platform Providers	Chase	Banks & Private Equity Investor
Aisin	Tier-1 Suppliers	Atlantia	Road infrastructure provision and operation	Bird	Bikes	China Grand Auto	Vehicle Distributor
ALD Automotive	Leasing & Rental Operator	ATM	Public Transport Operators	Blablacar	Mobility Platform Providers	China Mobile	Mobile Network Operator
Alibaba	Tech Giant	Atzuche	Mobility Platform Providers	Blockbuster	Video Rental Service	Cinven	Banks & Private Equity Investor
Alphabet	Aftersales Services			Bluegogo	Bikes	CISCO	Software Development
				BMJ Group	Analytics Maps and Application Provider	Citigroup	Banks & Private Equity Investor
				BMW Group	OEM	Citroen	OEM
				BorgWarner	EV specific Tier 1	Citymapper	Maps & Navigation
						Clubauto	Roadside Assistance

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Company	Type	Company	Type	Company	Type	Company	Type
Cnes	Device and Location Supplier	EasyTaxi	Mobility Platform Providers and Software development	Eurostat	Statistics Agency	GM	OEM
Comovee	Mobility Platform Providers			EW	Fleet & Fuel, ITS & Regulators	GMV	Device and Location Supplier
Connecteast	Road Operators	Edenred	Fuel Card Operators	Facebook	Tech Giant	Goldman Sachs	Banks & Private Equity Investor
Continental	Tier-1 Suppliers			Faurecia	Tier-1 Suppliers	Google	Tech Giant
Cox Automotive	OEM/Supplier	EE	Mobile Network Operator	FiA	Insurers, aggregators and assistance providers	Grab	Mobility Platform Providers
Coyote	Analytics Maps and Application Provider	Egis	Fleet & Fuel, ITS & Regulators			Grabhitch	Mobility Platform Providers
Credit Agricole	Insurance Companies	Elavon	Card Payment Provider	Fiat - Chrysler	OEM	Group 1 Automotive	Vehicle Distributor
Daimler	OEM			First Data	Banks & Private Equity Investor		
DAMTC	Roadside Assistance	Eliocity	Telematics Solution Providers	Fleetcomplete	Telematics Solution Providers	GSA	Space Agency
Danlaw	Telematics Solution Providers	EMC	Iot system integration	Fleetcor	Fuel Card Operators	GVB	Public Transport Operators
Dell	Iot system integration	Eni	Energy Company	Fleetmatics	Telematics Solution Providers	Harman	OEM/Supplier
Delphi	OEM/Supplier	Enterprise carshare	Leasing & Rental Operator	Flex	Iot system integration	Hellman & Friedman	Banks & Private Equity Investor
Denso	EV specific Tier 1	Eon	Charging station providers	Fluidtime	Platform integration	HERE mobility	Mobility Platform Providers and Software development
Didi Chuxing	Mobility Platform Providers	Ericsson	Mobile Harware & Software Provider	Flybrid	EV specific Tier 1 and 4	Hertz	Leasing & Rental Operator
Distruptive	Banks & Private Equity Investor	Erkon	Fleet & Fuel, ITS & Regulators	Ford	OEM	HHI	Road Operators
DKV	Fuel Card Operators			Andrew	Device and Location Supplier	Hino	OEM/Supplier
Drive/Reachnow	Mobility Platform Providers	ESRI	Analytics Maps and Application Provider	FUJITSU	Computer harware & Software	Hitachi Vantara	IoT Technology Companies
Drust	Telematics Solution Providers	Estradas Portugal	Road Operators	Garmin	Maps & Navigation	Hitch	Mobility Platform Providers and Software development
DubaiRTA	Road Operators	Euromaster	Fleet & Fuel, ITS & Regulators	Gazprom	Energy Company		
Dynamic Map Platform	Analytics Maps and Application Provider	Europ Assistance	Insurance Companies	GE	Energy Company	Honda	OEM
		EuroPark	Parking Operators	Generali	Insurance Companies	Honeywell	IoT Technology Companies
		European Commission	Fleet & Fuel, ITS & Regulators	Genivi	Automotive Alliance	HSBC	Banks & Private Equity Investor
				GLONASS	Satellite Navigation		

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Huawei	IoT Technology Companies	Jatco	EV specific Tier 1	Maven	Software Development	Moovel group	MaaS service provision
Hutton Collins	Banks & Private Equity Investor	Johnson Controls	EV specific Tier 1	Maxwell	Ultra capacitor production	moovit	Data analytics
Hyundai	OEM	Johnson Matthey Battery Systems	Battery Production	Mazda	OEM	Muncipal Parking	Parking Operators
						mycicero	Transport Platform
IAG	Insurers, aggregators and assistance providers	JustPark	Parking Operators	Mcvelc	Analytics Maps and Application Provider	myTaxi	Mobility Platform Providers
		Kapsch	Road infrastructure provision and operation	Mercedes Benz	OEM	Navitia.io	Transport Data Provider
Iber	Mobility Platform Providers	Kodak	Tech Giant	Meta System	Telematics Solution Providers	Navizon	Device and Location Supplier
IBM	Tech Giant	Konux	IoT Technology Companies	Metrobus	Public Transport Operators	NESSCAP	Ultra capacitor production
IDIS	Surveillance Systems	Landrover	OEM	Metropolitan Transportation Authority	Public Transport Operators	NetObjex	IoT Technology Companies
Imperial College London	Education	Leonardo & Co	Banks & Private Equity Investor			NETS	Tech firms
Indigo	Parking Operators	LG Chem	Battery Production	Michelin	OEM/Supplier	New Amsterdam Growth Capital LLC	Banks & Private Equity Investor
Ingenico Group	Payment Providers	LimeBike	Shared Bike Provider	Microlise	Fleet Telematics System	New York City	Cities
Inrix	Connected Car Analytics	Location Smart	Device and Location Supplier	Microsoft	Aftersales Services/ Tech giant	Newland	AIDC Manufaturer
Intek Group	Banks & Private Equity Investor	LoJack	Telematics Solution Providers	Mirror link	Integration Software	Nissan	OEM
Intel	OEM/Supplier	LoRa	Wireless Data Alliance	Mitsubishi	OEM	Nokia	Device and Location Supplier
Invers	Carsharing technology	Los Angeles	Cities	Miveo	Carsharing technology	Nomura	Banks & Private Equity Investor
Investcorp	Banks & Private Equity Investor	Lukoil	Energy Company	Mobike	Bike Sharing Provider	NTT	Telecom Operator
Ionity	Charging station providers	Lyft	Mobility Platform Providers	Mobileye	Software Development	nuTomy	Automobile service provider
IOXUS	Ultra capacitor production	Magna	Tier-1 Suppliers			Nvidia	Software Development
iParkit	Parking Operators	Marie de Paris	Service provision	Mondial Assistance	Insurers, aggregators and assistance providers	NYC OpenData	Service provision
Isuzu	OEM/Supplier	Mastercard	Payment Providers			Octo	Telematics Solution Providers
J.P. Morgan	Banks & Private Equity Investor	Matmut	Insurers, aggregators and assistance providers	Montezemolo & Partners	Banks & Private Equity Investor	Ofo	Bikes
Jaguar	OEM					Ola	Mobility Platform Providers

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Omoove	Mobility Platform Providers	Preferred Networks	Iot system integration	Ridecell	Mobility Platform Providers	Smile	Insurers, aggregators and assistance providers
Onstar	In-Vehicle Safety Software		Insurers, aggregators and assistance providers	RingGo	Parking Operators		
Opel	OEM	Promutuel		Rockwell Automation	IoT Technology Companies	Smobil	Telematics Solution Providers
Oracle	Tech firms			RTA	Road Operators		
Orange	Mobile network operator	Protean	Motor production	SafeFleet	Telematics Solution Providers	SNCF	Public Transport Operators
Orion	Telematics Solution Providers	Proximus	MNO		Device and Location Supplier	Socar	Mobility Platform Providers
		PSA	OEM	Samsung			
Ouicar	Mobility Platform Providers	PSD2	Payment Providers	SANEF	Road Operators	Sofico	Fleet & Fuel, ITS & Regulators
		Qilu transportation Group	Road Operators		Data analytics and IoT Technology Companies		Mobile Telecom Operators
Outsurance	Insurers, aggregators and assistance providers	Qixxit	MaaS service provision	SAP		Sprint	
		Qoros	OEM/Supplier		Analytics Maps and Application Provider	Sproverein	Public Transport Operators
Palm Monorail	Public Transport Operators	Qpark	Parking Operators	Sas		Square	Payment Providers
		Qualcomm	OEM/Supplier			Stripe	Payment Providers
Pamplomoma	Banks & Private Equity Investor	Qucit	Iot system integration	Scania	OEM	Suzuki	OEM
Panasonic	Battery Production			SCOOP@F	ITS Pilot Project		
Park'n Fly	Parking Operators	Quelink	Telematics Solution Providers	SFR	MNO	Swiftly	Connected City Big Data
ParkNow	Parking Operators			Shell	Energy Company		
Particle	IoT Technology Companies	RAC	Insurers, aggregators and assistance providers	Shopify	eCommerce Solutions	Switch	MaaS service provision
				Sick	Fleet & Fuel, ITS & Regulators	Sysnav	Device and Location Supplier
Pasco	Analytics Maps and Application Provider	RACC	MaaS service provision	Sigfox	Wireless Network Provider	T Mobile	Aftersales Services
						Telefonica	MNO
PayLane	Payment Providers	Radiuz	Platform integration	Sistema	Telematics Solution Providers	Telekom Austria	Mobile Telecom Operators
PayPal	Payment Providers						
Pendragon	Vehicle Distributor	RATP	Public Transport Operators	Sixt	Leasing & Rental Operator	Telesure	Insurers, aggregators and assistance providers
Penske	Vehicle Distributor			SK Telecom	MNO		
Petrobras	Energy Company	Reliance	Energy Company	Skedgo	Mobility Platform Providers		
PetroChina	Energy Company	Remy	Motor production			Telit	OEM/Supplier
Pioneer	OEM/Supplier	Renault-Nissan	OEM	Skeleton Technologies	Ultra capacitor production		
PPZuche	Mobility Platform Providers	Renova Group	Banks & Private Equity Investor			Telstra	Mobile Telecom Operators

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Tencent	Banks & Private Equity Investor	Valeo	OEM	YouGov	Research Body
Teradata	Data analytics	Velib	Bike Sharing Provider		Insurers, aggregators and assistance providers
Tesla	OEM	Verdeva	Fintech	youi	
ThalesAlenia Space	Device and Location Supplier	Verizon	MNO		
theParkingSpot	Parking Operators	VIA	MaaS service provision	Yueqi	Bikes
Tim	MaaS service provision	Viasal	Telematics Solution Providers	Zendrive	Transport Data Provider
Time for Growth	Banks & Private Equity Investor	Vinci	Road infrastructure provision and operation	Zipcar	Mobility Platform Providers
TomTom	Software Development	Visa	Payment Providers	Zoomcar	Mobility Platform Providers
Total	Energy Company	Vodafone	MNO		
Touring	Roadside Assistance	Volkswagen	OEM		
Toyota	OEM	Volvo	OEM		
Traak	Data analytics	Vulog	Mobility Platform Providers and Software development		
Transit	MaaS service provision				
Transport for London	Public Transport Operators	Wawa	Fuel Card Operators		
Transurban	Road Operators	Waymo	Aftersales Services		
Travelspirit	Platform integration	Waze	Mobility Platform Providers		
Turo	Mobility Platform Providers	Weiner Linien	MaaS service provision		
Uber	Mobility Platform Providers	Wex	Fuel Card Operators		
UnionPay	Payment Providers	Whim	Mobility Platform Providers		
UQM	Motor production				
US Hybrid	Motor production	Williams hybrid power	EV specific Tier 1 and 7		
USA Bureau of Transport Statistics	Statistics Agency	Wipro	Iot system integration		
UTA	Fuel Card Operators	worldpay	Payment Providers		

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